IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.	:	09/824,493
Filed	:	April 02, 2001
TC/A.U.	:	2157
Examiner	:	Lashonda T. Jacobs
Docket No.	:	47181-00244USPT
Customer No.	:	30223

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on September 25, 2006.

Signature: Carla Rivera

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

SUPPLEMENTAL 37 C.F.R. § 1.131 DECLARATION

Dear Sir:

We, Timothy G. Curray and Bradley A. Lazenby, named co-inventors of pending U.S. Patent Application No. 09/824,493 ("the '493 application"), entitled "Ethernet Communications For Power Monitoring System," supplementing our "37 C.F.R. § 1.131 DECLARATION" filed April 25, 2006, hereby declare:

1. The subject matter claimed in all the pending claims 1-41 in the '493 application was actually reduced to practice prior to November 28, 2000. The hardware that was reduced to practice is the Ethernet Communication Card, or "ECC," shown in the photograph on the first page of Exhibit B (submitted with our Declaration filed April 25). The ECC is shown in that photograph partially inserted into a Power Logic Series 4000 Circuit Monitor.

2. Attached as Exhibit C is a Schneider Electric/Square D news release dated July 20, 2000, announcing that the ECC is "Now Available" (i.e., as of July 20, 2000). This news release specifically mentions that the ECC allowed customers "to connect their POWERLOGIC CM4000 Circuit Monitor to their LAN/WAN system for direct Ethernet communications," that "An RS-485 Modbus master port on the ECC supports a daisy-chain of up to 31 additional devices, allowing the CM4000 with ECC to act as an Ethernet gateway for the devices," and that

"Embedded HTML pages allow for easy device setup and supply real-time power system information from the CM4000 circuit monitor through a standard web browser. Similar information can also be viewed for devices daisy-chained to the ECC's onboard RS-485 port."

3. Attached as Exhibit D is a Schneider Electric/Square D Sales Bulletin dated August, 2000, entitled "POWERLOGIC Ethernet Communication Card." This bulletin specifically describes the ECC as having the following features and functions:

POWERLOGIC Ethernet Communication Card Features

- Provides direct Ethernet TCP/IP communication for the POWERLOGIC Series 4000 circuit monitor
- Utilize existing Ethernet LAN/WAN
- View data and information through embedded HTML pages on a standard web browser
- Embedded HTML pages for setup and configuration
- 10/100 BaseT and 100 BaseFX ports
- Supports Modbus/TCP
- RS485 port supports up to 31 devices over a mixed mode daisy chain, i.e., SY/MAX, Modbus, and Jbus
- Mounts directly into expansion slot on Series 4000 circuit monitor
- Downloadable firmware via Internet

Direct Connection to Ethernet

The Ethernet Communication Card (ECC) provides Series 4000 Circuit Monitors direct high speed Ethernet connection to TCP/IP-based LAN/WAN networks. The ECC uses standard UTP RJ-45 and fiber optic LC connectors on the same board for flexibility in network cabling. Modbus/TCP protocol allows you a wider range of connectivity to include more products and gives network architecture more flexibility. Communicating at 10/100 megabaud speeds, the Series 4000 Circuit Monitor with the ECC puts fast access to information at your fingertips.

East Installation, Setup, and Data Viewing

The ECC easily installs into an expansion slot on the circuit monitor and connects by either UTP or fiber. A standard web browser gives access to embedded HTML pages that guide you through the setup and configuration process with ease. The power of the circuit monitor is now at your service with browser access to web

pages displaying real-time data. Five embedded HTML pages are customizable to meet your needs and can be created on a desktop PC then uploaded over the Ethernet through the ECC.

Information is also available from devices daisy-chained to the onboard RS-485 port. The port supports mixed mode communications including SY/MAX, MODBUS, and JBUS protocols. Up to 31 defined devices can be supported, 64 with a repeater.

Ethernet-based POWERLOGIC Power Monitoring Systems

The POWERLOGIC Power Monitoring and Control System with the Series 4000 Circuit Monitor and ECC allows you to leverage your existing Ethernet technology to satisfy your power monitoring and control system needs. Access to power and energy data, power quality, and other information is now available over virtually any existing communication infrastructure, including the Internet.

The combination of the Series 4000 Circuit Monitor and ECC provides greater expansion and flexibility in existing monitoring and control systems. As your POWERLOGIC system expands (the number of users increase, and additional devices are installed), you will be able to use standard off-the-shelf products to meet your specific network requirements.

4. ECC's were sold and shipped to several customers in August, September and October of 2000, and those ECC's included all the features and functionality described in paragraphs 2 and 3 of our Declaration filed April 25, 2006. Two such sales are confirmed by Exhibits E and F, which are copies of Square D Order Data Reports showing that ECC's were sold and shipped to Southern California Edison in Westminster, California on August 17, 2000, and to Fermilab in Batavia, Illinois on September 5, 2000. More than 100 ECC's were shipped to various customers in the United States before November of 2000.

5. One example of an ECC that was manufactured in September of 2000 is shown in the photographs in Exhibit G. The label affixed to this ECC, visible in the upper right-hand corner of the first photograph in Exhibit G, shows that this ECC was made on September 11, 2000, and was assigned Serial No. 13000060. The optical fiber port is covered by the cream-colored cap protruding from the top edge of the card in the first photograph.

6. Square D would not have sold and shipped the ECC, particularly in such quantities, without having thoroughly tested the design of the final product to ensure that it would perform the functions described in the sales literature and news releases (e.g., Exhibit C) and in the Instruction Bulletin that accompanied each product (see, e.g., the Instruction Bulletin

submitted as Exhibit B to our Declaration filed April 25). We were personally involved in such testing throughout the first eight months of 2000. Many of the tests to which the ECC was subjected prior to the first sales in August of 2000 are described in paragraphs 2 and 3 of our Declaration filed April 25. Those tests were carried out using test protocols established within Square D and described in an "ECC Test" document attached hereto as Exhibit H.

7. Prior to August of 2000, the ECC produced satisfactory results in each of the tests identified in Exhibit H. Those test results demonstrated that the ECC performed all the functions described in paragraphs 2 and 3 of our Declaration filed April 25. The ECC's that were tested at that time contained all the components and features identified in the bullet points listed in paragraphs 2 and 3 of our Declaration filed April 25, and were tested in a Square D Power Logic Series 4000 Circuit Monitor (referred to in Exhibit H as "CM4") to communicate with, and gather data in real time from, daisy-chained slave devices such as Square D's Series 2000 and Series 4000 Circuit Monitors (referred to in Exhibit H as "CM2s" and "CM4s") and Power Meters (referred to in Exhibit H as "PMs"). Custom HTML pages stored in the CM4 were accessed through the ECC using a standard web browser in a PC, to display information from both the CM4 and the daisy-chained slave devices. The ECC had an RS-485 communication port (used to connect to the daisy chain of slave devices via 4-wire or 2-wire shielded cable), a 10/100 BaseT Twisted Pair port with a standard RJ-45 connector, a 100BaseFx port for optical fiber cable connections (either half-duplex or full-duplex), and a "ECC/CM4000 Connector" for connecting the ECC to the CM4. The ECC supported communications with MODBUS/JBUS devices and "PowerLogic" protocol (SY/MAX" devices). Custom pages could be uploaded from a PC to the CM4 using File Transfer Protocol (FTP). Thus, the tests conducted prior to August of 2000 included all the elements of all the claims 1-41 in the '493 application, and the results of those tests confirmed that all those elements worked for their intended purposes. Specifically:

- the "processor" recited in independent claims 1, 2, 3, 4, 5, 8, 9, 10, 11, 12, 13, 16, 38 and 41 (which corresponds to the CPU shown in Figure 1 on page 8 of Exhibit A, which is the same as Fig. 2 of the '493 application) was successfully tested prior to August of 2000 as both a master device and a slave device in the various "ECC Communications" tests identified in sections 1.1 through 1.6 of Exhibit H;
- the "communications interface" recited in independent claims 1, 3, 4, 5, 6, 7, 9, 11, 12, 14, 15, 38, 39 and 40 (which correspond to the RS485 port shown in Figure 1 on

page 8 of Exhibit A, which is the same as Fig. 2 of the '493 application, and the "slave RS485 devices" referred to on page 7 of Exhibit A) were successfully tested prior to August of 2000 in the various "ECC Communications" tests identified in sections 1.1 through 1.6 of Exhibit H, and in the various "ECC Functionality" tests identified in sections 2.1 through 2.5 of Exhibit H;

- the connected "slave devices" recited in independent claims 1-3, 10-11, 18-19, 25-26, 32-33 and 38 (which correspond to the "slave RS485 devices" referred to on page 7 of Exhibit A) were successfully tested prior to August of 2000 as a master device in the various "ECC Communications" tests identified in sections 1.1 through 1.6 of Exhibit H;
- the use of "real-time information" recited in independent claims 1, 9, 17, 24, 31 and 38 (which corresponds to the "real time, tabular data from the attached devices" referred to on page 36 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Communications" tests identified in sections 1.1 through 1.6 of Exhibit H, and in the various "ECC Security" tests identified in section 3.5.1 of Exhibit H;
- the "HTML pages" recited in independent claims 1, 17, 24, 31 and 38 (which correspond to HTML pages referred to on pages 2, 17, 21-22, 36, 50 and 55 of Exhibit A) were successfully tested prior to August of 2000 in the various "ECC Security" tests identified in sections 3.1 through 3.5 in Exhibit H;
- the "JavaScript" recited in claims 4, 12, 20, 27 and 34 (which corresponds to the JavaScript referred to on pages 37 and 40 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Security" tests identified in section 3.5.1 of Exhibit H;
- the "SyMax" recited in claims 3, 11, 19, 26 and 33 (which corresponds to the SyMax referred to on pages 7, 38 and 51 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Communications" tests identified in sections 1.1.3, 1.2.3, 1.4.3 and 1.5.3 of Exhibit H;
- the "Modbus" recited in claims 3, 11, 19, 26 and 33 (which corresponds to the Modbus referred to on pages 7, 16, 20, 24, 31-33, 38, 51, 53, 55 and 58-60 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC

Communications" tests identified in sections 1.1.2-1.1.3, 1.2.2-1.2.3, 1.3.1, 1.4.2-1.4.3 and 1.5.2-1.5.3 of Exhibit H;

- the "Jbus" recited in claims 3, 11, 19, 26 and 33 (which corresponds to the Jbus referred to on pages 7, 24 and 51 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Communications" tests identified in sections 1.1.3, 1.2.3, 1.4.3 and 1.5.3 of Exhibit H;
- the "web browser" or "internet browser" recited in claims 5, 8, 13, 16, 21 and 41 (which corresponds to the web browser or internet browser referred to on pages 17, 21 and 22 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Security" tests identified in sections 3.1 through 3.3 of Exhibit H;
- the "login" recited in claims 5, 13, 21, 28 and 35 (which corresponds to the login referred to on pages 17, 31, 36 and 50 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Security" tests identified in sections 3.1 through 3.3 of Exhibit H;
- the "access token" recited in claims 5, 13, 21, 28 and 35 (which corresponds to the access token referred to on pages 17, 31 and 59 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Security" tests identified in sections 3.1 through 3.3 of Exhibit H;
- the "fast ethernet transceiver" recited in claims 7,15 and 40 (which corresponds to the fast ethernet transceiver referred to on page 12 of Exhibit A) was successfully tested prior to August of 2000 in all the various ECC tests identified in Exhibit H;
- the "10/100 media access controller" recited in claims 7, 15, 23, 30, 37 and 40 (which corresponds to the 10/100 media access controller referred to on pages 7, 8, 10 and 12 of Exhibit A) was successfully tested prior to August of 2000 in all the various ECC tests identified in Exhibit H;
- the "daisy chain" recited in claims 3, 11, 19, 26 and 33 (which corresponds to the daisy chain referred to on pages 11, 20, 24 and 36 of Exhibit A) was successfully tested prior to August of 2000 in the various "ECC Communications" tests identified in sections 1.1 through 1.6 of Exhibit H;
- the "full duplex or half duplex communications" recited in claims 3, 11, 19, 26 and 33 (which corresponds to the full duplex and half duplex referred to on pages 1 and 51 of

Exhibit A) were successfully tested prior to August of 2000 in the various "ECC Communications" tests identified in sections 1.1 through 1.6 of Exhibit H (the "4Wire" tests were full duplex and the "2 Wire" were half duplex);

- the "single physical interface chip capable of supporting dual physical ethernet media types" recited in claims 6, 14, 22, 29, 36 and 39 (which corresponds to the PHY referred to throughout Exhibit A and identified on page 14 of Exhibit A as an "IC," which means an integrated circuit or chip) was successfully tested prior to August of 2000 in all the various ECC tests identified in Exhibit H.

8. The "pseudo-ECL interface" recited in claims 7, 15, 23, 30, 37 and 40 (which corresponds to the pseudo-ECL interface referred to on page 12 of Exhibit A) and the "100BaseFx fast fiber transceiver" recited in claims 7, 15, 23, 30, 37 and 40 (which corresponds to the 100BaseFx fast fiber transceiver referred to on pages 7 and 12 of Exhibit A) were also successfully tested. These tests involved the use of the optical fiber port on the ECC, and it was necessary for us to purchase a special optical-fiber cable for such tests. The attached Exhibit I is a purchase order for that cable, purchased on April 26, 2000.

9. Attached as Exhibit J are copies of exemplary Square D records of bug results after tests conducted on ECC's in June and July of 2000, prior to the first shipments of ECC's to customers in August of 2000.

10. We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and, further, that these statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the '493 application or any patent issued thereon.

Dated: September 5, 2006

Timothy G. Curray

Dated: September __, 2006

Bradley A. Lazenby

Contact:
Bradford Muller
Price/McNabb
Phone: (704) 375-0123, ext. 319
Fax: (704) 375-0222
BMuller@pricemcnabb.com

www.powerlogic.com

POWERLOGIC® SERIES 4000 CIRCUIT MONITOR NOW AVAILABLE WITH ETHERNET COMMUNICATIONS CARD

Ethernet Connectivity Allows Access to Real-Time Power System Information over The Web

PALATINE, Ill. – July 20, 2000 – A new Ethernet Communications Card (ECC) allows customers to connect their POWERLOGIC® CM4000 Circuit Monitor to their LAN/WAN system for direct Ethernet communications. The ECC provides high-speed communications via 10/100baseT or 100baseFX connections.

"By connecting their power monitoring and control systems directly into their Ethernet system, customers can enhance system communications and maximize the return on their infrastructure investment," said Gary Jones, Director of the Power Monitoring Organization within Square D. "Adding the ECC to the POWERLOGIC System is one more step in our efforts to meet the demand of customers for open network devices."

Based on plug and play technology, the ECC plugs into an expansion slot on the circuit monitor much like a video card plugs into the expansion slot in a PC. The connection to the Ethernet network can be made using either UTP or fiber cabling. An RS-485 Modbus master port on the ECC supports a daisy-chain of up to 31 additional devices, allowing the CM4000 with ECC to act as an Ethernet gateway for the devices.

The ECC supports Modbus/TCP protocol. Embedded HTML pages allow for easy device setup and supply real-time power system information from the CM4000 circuit monitor through a standard web browser. Similar information can also be viewed for devices daisy-chained to the ECC's onboard RS-485 port.

Schneider Electric/Square D
1415 South Roselle Road
Palatine, IL
60067-7399
Tel. (1) 847-397-2600
Fax (1) 847-925-7271
www.SquareD.com

Located in LaVergne, Tenn., the Power Management Organization was created within Square D in 1989 to develop, design and market power monitoring and control systems and analytical services. The Power Management Organization offers a full range of products and services, including power monitoring hardware and software, lighting control hardware and software and a variety of engineering services.

Schneider Electric is the World's Power and Control Specialist, with operations in 130 countries and 67,500 employees worldwide. The company reported 1999 sales of approximately $8.4 billion. Schneider Electric is headquartered in Paris, France and has four major brands – SQUARE D, MODICON, TELEMECANIQUE and MERLIN GERIN.

The full line of electrical distribution equipment includes circuit breakers, load centers, panelboards, switchboards, low and medium voltage switchgear, unit substations, transformers, safety switches, busway and wire management, power quality and power monitoring equipment. Services include equipment maintenance and repair as well as maintenance contracts and power management services.

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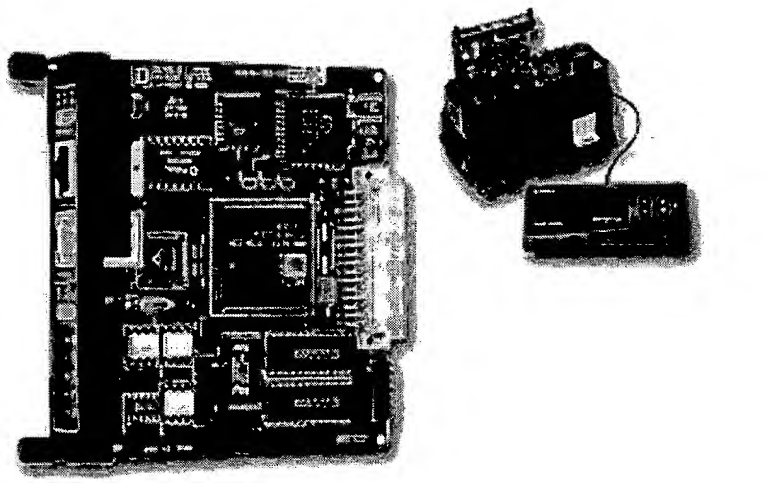
This release is submitted for consideration in both print and Web publications.

POWERLOGIC Ethernet Communication Card

The POWERLOGIC® Ethernet Communication Card allows direct connection of POWERLOGIC Circuit Monitors and POWERLOGIC compatible devices to any TCP/IP based network.

POWERLOGIC Ethernet Communication Card Features

- Provides direct Ethernet TCP/IP communication for the POWERLOGIC Series 4000 circuit monitor
- Utilize existing Ethernet LAN/WAN
- View data and information through embedded HTML pages on a standard web browser
- Embedded HTML pages for setup and configuration
- 10/100 BaseT and 100 BaseFX ports
- Supports Modbus/TCP
- RS485 port supports up to 31 devices over a mixed mode daisy chain, i.e., SY/MAX, Modbus, and Jbus
- Mounts directly into expansion slot on Series 4000 circuit monitor
- Downloadable firmware via Internet



The explosion in information technology networking has created a natural evolution for power monitoring and control systems toward high-speed open communication networks. POWERLOGIC Power Monitoring and Control Systems are rapidly leading the industry in this direction with the latest development for the Series 4000 Circuit Monitor, the Ethernet Communication Card.

Direct Connection to Ethernet

The Ethernet Communication Card (ECC) provides Series 4000 Circuit Monitors direct high speed Ethernet connection to TCP/IP-based LAN/WAN networks. The ECC uses standard UTP RJ-45 and fiber optic LC connectors on the same board for flexibility in network cabling. Modbus/TCP protocol allows you a wider range of connectivity to include more products and gives network architecture more flexibility. Communicating at 10/100 megabaud speeds, the Series 4000 Circuit Monitor with the ECC puts fast access to information at your fingertips.

Easy Installation, Setup, and Data Viewing

The ECC easily installs into an expansion slot on the circuit monitor and connects by either UTP or fiber. A standard web browser gives access to embedded HTML pages that guide you through the setup and configuration process with ease. The power of the circuit monitor is now at your service with browser access to web pages displaying real-time data. Five embedded HTML pages are customizable to meet your needs and can be created on a desktop PC then uploaded over the Ethernet through the ECC.

Information is also available from devices daisy-chained to the onboard RS-485 port. The port supports mixed mode communications including SY/MAX, MODBUS, and JBUS protocols. Up to 31 defined devices can be supported, 64 with a repeater.

SQUARE D
Schneider Electric

POWERLOGIC Ethernet Communication Card

Technical Specifications

Control Power Input Specifications

ECC21 ..... Derives control power directly from the Circuit Monitor

Environmental Specifications

Ambient Operating Temperature ..... -25 to 70°C

Ambient Storage Temperature ..... -40 to 85°C

Relative Humidity Rating (non condensing) ..... 5 to 95%

Altitude Range ..... -200 to +10,000 ft

Standard Compliance

Electromagnetic Interference

Radiated ..... FCC Part 15 Class A/CE Heavy Industrial

Conducted ..... FCC Part 15 Class A/CE Heavy Industrial

Electrostatic Discharge .... IEC 1000-4-2 Level 3

Electrical Fast Transient ... IEC 1000-4-4 Level 3

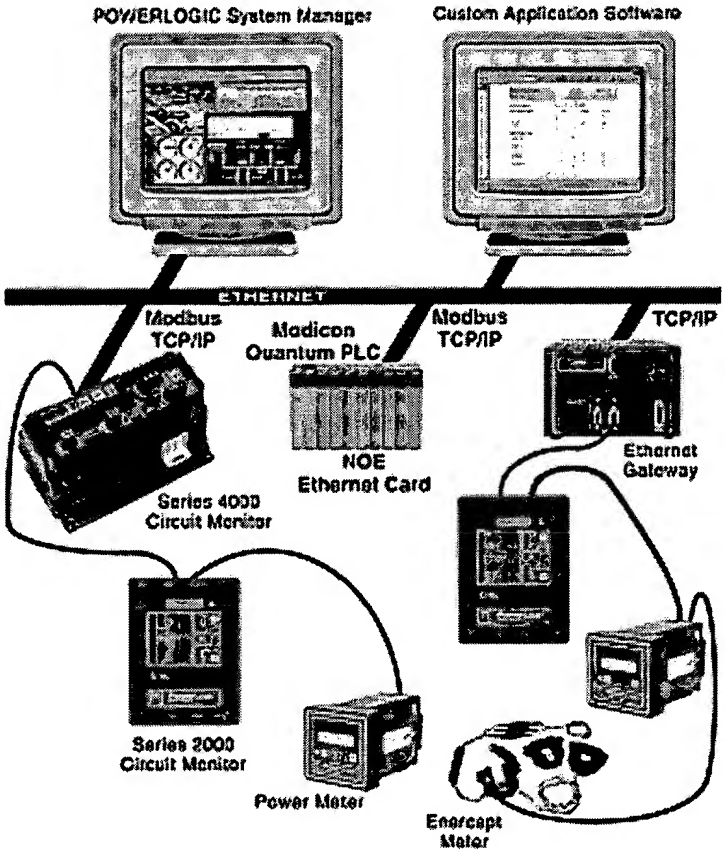
Immunity to Surge ..... IEC 1000-4-3 Level 4

Immunity Radiated ..... IEC 1000-4-3 Level 3

Ethernet-based POWERLOGIC Power Monitoring Systems

The POWERLOGIC Power Monitoring and Control System with the Series 4000 Circuit Monitor and ECC allows you to leverage your existing Ethernet technology to satisfy your power monitoring and control system needs. Access to power and energy data, power quality, and other information is now available over virtually any existing communication infrastructure, including the Internet.

The combination of the Series 4000 Circuit Monitor and ECC provides greater expansion and flexibility in existing monitoring and control systems. As your POWERLOGIC system expands (the number of users increase, and additional devices are installed), you will be able to use standard off-the-shelf products to meet your specific network requirements.



Ordering Information

Type	Description
ECC21	POWERLOGIC Ethernet Communication Card

Bulletin No. 3020HO0003 August 2000

SQUARE D
Schneider Electric

17-Aug-00 11:34

ORDER DATA REPORT

Q2C NO: 14105460 REPRINT ORDER ACCOUNT No: 15173 P.O. NO: ESI4873

SALES OFFICE	LOS ANGELES
ENTERED BY	STEVE AGARWAL
SPD AUTHORIZER	TERESA A LENEAVE
CUSTOMER	ENERGY SERVICES INC
SPECIFIER	
Project Mgr	FERNANDO M ORTIZ
Project Mgr Loc	LOS ANGELES

Sold To:
ENRON ENERGY SERVICES
611 ANTON BLVD SUITE 700
COSTA MESA CA 92626

Ship To:
ESI- LAKE ELSINORE POWERLOGIC
SOUTHERN CALIFORNIA EDISON
7300 FENWICK LANE
WESTMINSTER CA 92683

13000033

Loc	Itm	Sub Ln	Ship Schd	Rev	Catalog/Description	Order Qty	Unfill Qty	Stock Stat	Purch Line #	Price	PD Cat	PD Sub	Line Code
048	003	00	01	00	ECC21	1	1			575.00	09780		9695
					ETHERNET COMMUNICATION CARD				Prog Pnt: Assembly				

Not Before: Cust Req Ship: Committed To: Orig Prom: 08/30/2000 Curr Prom: 08/30/2000

Routing: STANDARD Carrier: STANDARD

Sub Line Descr: Designations:

Ship To:
JIMCO ELECTRIC
JIMCO ELECTRIC
26752 OAK AVENUE
UNIT "H"
SANTA CLARITA CA 91351

Action Stat: N

JPS 1Z 192 0X L0 3369 7003

** END OF REPORT **

REVIEWED BY

REVIEWED FOR

SHIP'D AUG 17 2000

05-Sep-00 12:37

ORDER DATA REPORT

EXPEDITE

Q2C NO: 14216687 REPRINT ORDER ACCOUNT No: 17254 P.O. NO: 532606

SALES OFFICE	CHICAGO FIELD SALES OFFICE
ENTERED BY	LARRY A NORGAARD
SPD AUTHORIZER	SUSAN E HAYES
CUSTOMER	FERMI NATIONAL ACCELERATOR LAB
SPECIFIER	
Project Mgr	DENNIS J HAVLICEK
Project Mgr Loc	CHICAGO FIELD SALES OFFICE

Sold To:
FERMILAB ACCTS PAYABLE
PO BOX 5000
BATAVIA IL 60510

Ship To:
FERMILAB
RECEIVING WAREHOUSE 2
KIRK RD & WILSON
BATAVIA IL 60510

Markings: CUST PO# ~~532606~~
CM - 11000396 - 398
CVM - 12000396 - 398

Loc	Itm	Sub Ln	Ship Schd	Rev	Catalog/Description	Order Qty	Unfill Qty	Stock Stat	Purch Line #	Price	PD Cat	PD Sub	Line Code
048	001	00	01	00	CM4000	3 ✓	3			4,582.65	09780		9695
					POWERLOGIC CIRCUIT MONITOR w/ ADVANCED PQ					Prog Pnt: Assembly			

Not Before: Cust Req Ship: Committed To: Orig Prom: 09/12/2000 Curr Prom: 09/12/2000
Routing: AIR Carrier: NEXT DAY DELIVERY UPS RED
Sub Line Descr: Designations:

Action Stat: N

1300038-40

Loc	Itm	Sub Ln	Ship Schd	Rev	Catalog/Description	Order Qty	Unfill Qty	Stock Stat	Purch Line #	Price	PD Cat	PD Sub	Line Code
048	002	00	01	00	ECC21	3 ✓	3			1,275.00	11300		9695
										Prog Pnt: Assembly			

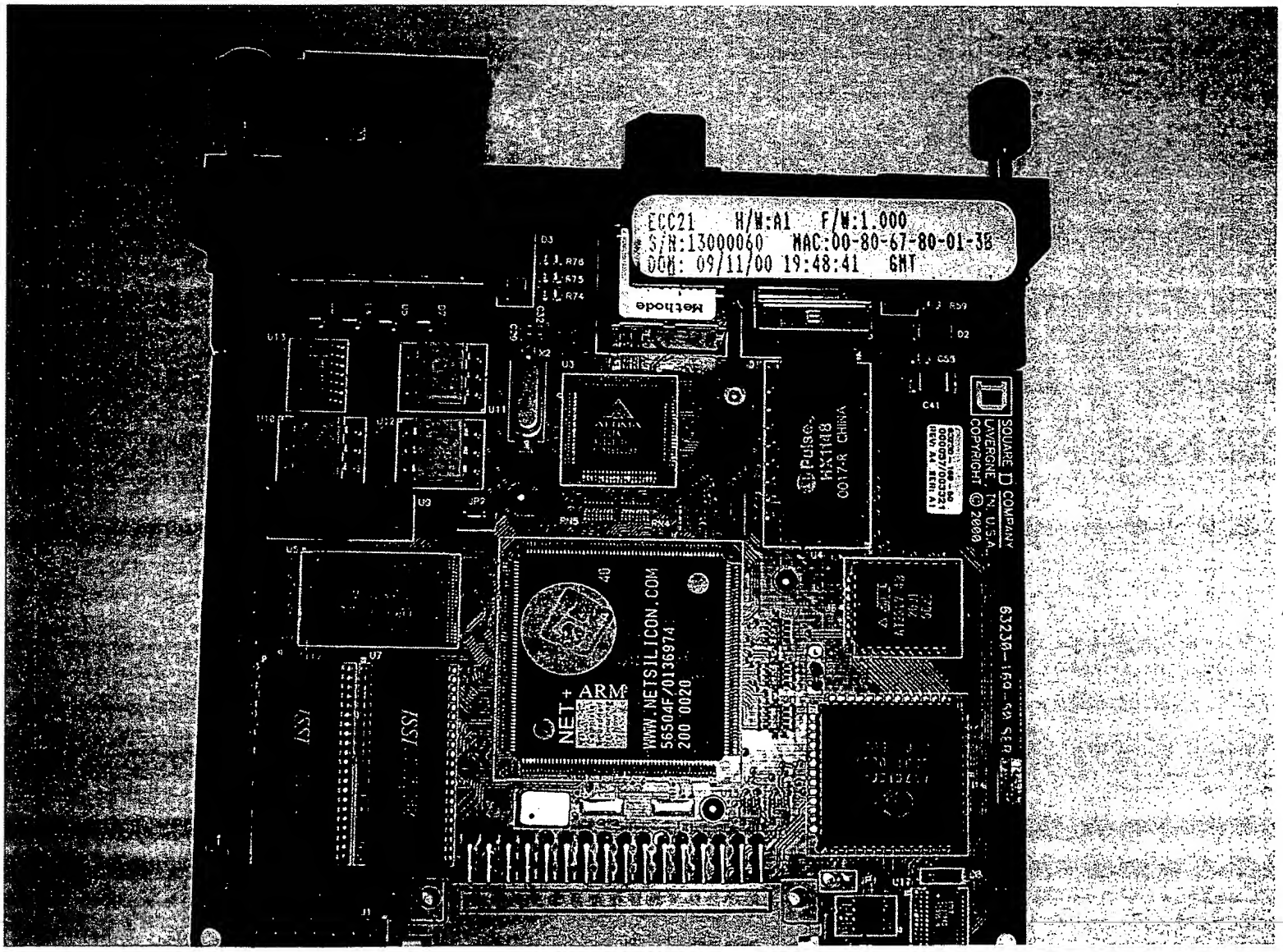
Not Before: Cust Req Ship: Committed To: Orig Prom: 09/12/2000 Curr Prom: 09/12/2000
Routing: AIR Carrier: NEXT DAY DELIVERY UPS RED
Sub Line Descr: Designations:

Action Stat: N

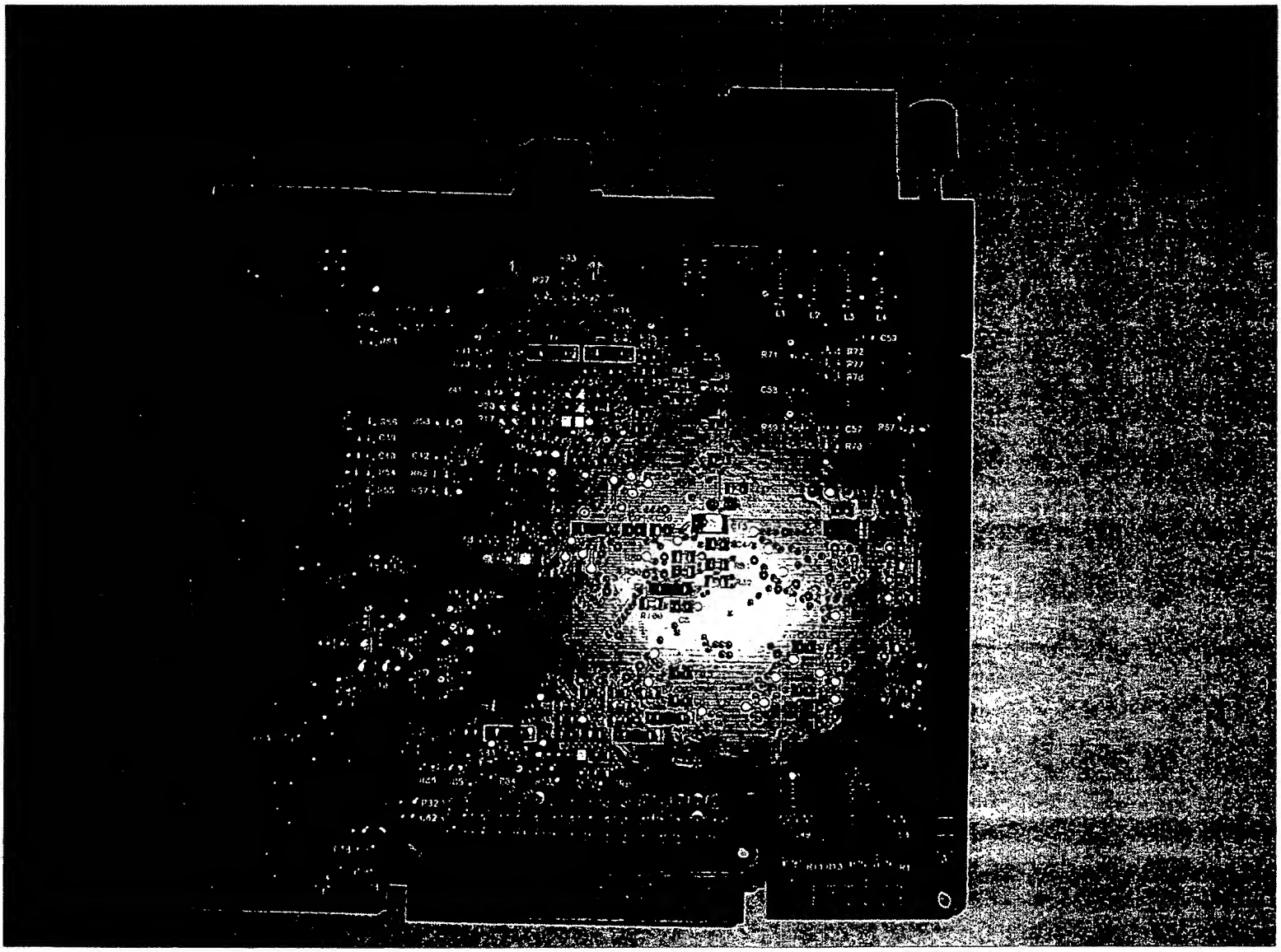
Ship to James Clark

UPS 1Z 192 0X 10 1377 090 5

SHIP'D SEP 05 2000



BEST AVAILABLE COPY



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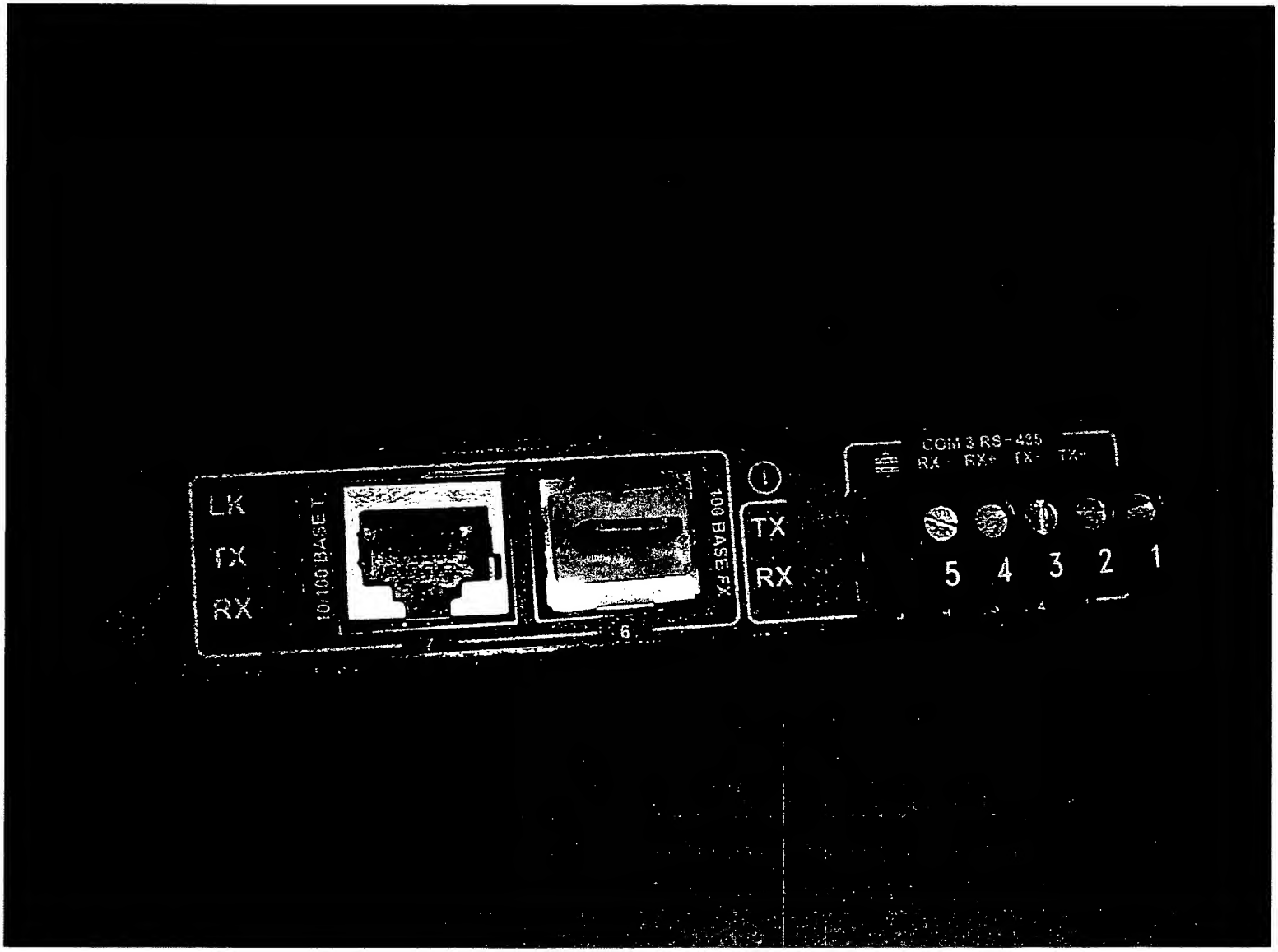

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ECC TEST

1. ECC Communications

1.1 4 Wire RS485 verification at 9600 baud rate

1.1.1 **Powerlogic Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM2s and PMs) to use the powerlogic protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.1.2 **Modbus Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s and PMs) to use the modbus protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.1.3 **Mixed Mode (Powerlogic, Modbus, Jbus, &/or Symax):** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s, CM2s, and PMs), which will include different protocols. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.2 4-Wire RS485 verification at 19.2k baud rate

1.2.1 **Powerlogic Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM2s and PMs) to use the powerlogic protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.2.2 **Modbus Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s and PMs) to use the modbus protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.2.3 **Mixed Mode (Powerlogic, Modbus, Jbus, &/or Symax):** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s, CM2s, and PMs), which will include different protocols. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.3 4 Wire RS485 verification at 38.4k baud rate

1.3.1 **Modbus Protocol:** Create a system containing 32 CM4s. The 1st device is the host CM4 containing the ECC. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

ECC TEST

1.4 2 Wire RS485 verification at 9600 baud rate

1.4.1 **Powerlogic Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM2s and PMs) to use the powerlogic protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.4.2 **Modbus Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s and PMs) to use the modbus protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.4.3 **Mixed Mode (Powerlogic, Modbus, Jbus, &/or Symax):** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s, CM2s, and PMs), which will include different protocols. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.5 2 Wire RS485 verification at 19.2k baud rate

1.5.1 **Powerlogic Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM2s and PMs) to use the powerlogic protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.5.2 **Modbus Protocol:** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s and PMs) to use the modbus protocol. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.5.3 **Mixed Mode (Powerlogic, Modbus, Jbus, &/or Symax):** Create a system containing 32 devices (The 1st device is the host CM4 containing the ECC. Include a combination of CM4s, CM2s, and PMs), which will include different protocols. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

1.6 2 Wire RS485 verification at 38.4k baud rate

1.6.1 **Modbus Protocol:** Create a system containing 32 CM4s. The 1st device is the host CM4 containing the ECC. Go online with the system and verify that all devices talk. Perform a communications test on the system and verify that it passes.

2. ECC Functionality

2.1 Verify tables and displays

2.1.1 **View tables and verify that the values are correct:** Set up a system containing CM4s, CM2s, Proxima Breakers, and PMs (2 devices per device type). Use 19.2K as the baud rate. Go online with the system and view every table and verify that the tables display the correct information. (Time, Metered Values, & Physical Appearance)

2.1.2 **View meters display for correctness**: View meter displays and verify that they display the correct information. (Time, Metered Values, & Physical Appearance)

2.1.3 **View bar charts and verify that they work correctly:** View bar charts and verify that they display the correct information. (Time, Metered Values, & Physical Appearance)

2.2 Verify GFX diagrams

2.2.1 **View diagram with every type of GFX block:** Create a GFX diagram using all of the different types of blocks and then view each block to see if it updates correctly with the proper values.

2.3 Verify Logging and Alarms

2.3.1 **Set up logging:** Setup a basic logging template and select a CM4, CM2, Proxima Breaker & PM650 for devices to log the basic quantities. Verify that logging is working by viewing historical data and trend plots.

2.3.2 **Set up analog and digital alarms:** Set up an analog and digital alarm for a CM4, CM2, Proxima Breaker, & PM650. Verify that the alarms are working by initiating both the analog and digital alarms making sure that the alarms are annunciated in the alarm log for all devices.

2.3.3 **View active functions and verify that they are correct:** Click on the Function tab and verify that the active functions are getting updated.

2.4 Verify Waveforms

2.4.1 **Retrieve Waveforms:** Retrieve a 4 cycle, 64 cycle, and high-resolution waveform from a CM4 and a CM2.

2.4.2 **Export Waveforms:** Export retrieved waveforms into export folder.

2.4.3 **Import Waveforms:** Import waveforms from export folder.

2.5 Read and Write Registers

2.5.1 **Read register:** Read a single register from a CM2 & CM4 to verify ability to read a register.

2.5.2 **Write register:** Write a value into s register and then read the register to verify that the value was taken.

2.5.3 **Read multiple registers:** Read multiple registers from both a CM2 and CM4 to verify multiple register reads.

2.5.4 **Write multiple registers:** Write multiple registers on both a CM2 and CM4 and then read the registers to verify that the values were taken.

3. ECC Security

3.1 Verify user levels for access rights

3.1.1 **Test the administrator password:** View all tables that are available to the HTML format.

3.1.2 **Test the view only access levels:** While using the user1 password, try to view the HTM pages used for setup. Verify that these pages are not in the list.

3.1.3 **Test none access level:** Verify that no HTML pages are available from a client with no access.

3.1.4 **Verify bit maps for user3 password:** Read register 522 for a client with the user3 password and verify that all the bits are zero.

3.1.5 **Verify bit maps for administrator password:** Read register 522 for a client with the administrator password and verify that all the bits are set to 1 unless designated to be reserved for future use.

3.2 Verify that 10 access tokens can be active at one time

3.2.1 **Access the ECC from 10 sources:** Verify that HTML pages can be view from 10 different clients that have view access.

3.2.2 **Attempt to access the ECC from 11 sources:** Verify that access is denied for the 11th client that is trying to view and HTML page.

3.3 Verify Advanced Setup

3.3.1 **Make sure that this setup is only accessible by the administrator:** Try to access this HTML page without logging in with the administrator password. Verify that this is not allowed.

3.3.2 **Verify default access token expiration time:** With the access expiration time set for the 2 minute default don't request any information from client for 3 minutes. Then try to request for some information and verify that you have to logon again.

3.3.3 **Verify access token expiration time less than default:** Configure the access token to expire after 1 minute and verify that it works. Don't request any information from client for 1. Minute and 30 seconds. Then try to request for some information and verify that you have to logon again.

3.3.4 **Verify access token expiration time greater than default:** Configure the access token to expire after 5 minute and verify that it works. Don't request any information from client for 6. Minutes. Then try to request for some information and verify that you have to logon again.

3.3.5 **Configure the timeout for the CM4:** Change the timeout for the CM4 and then refresh the Advanced Parameters Setup HTML page to verify that the change was accepted.

3.3.6 **Configure the timeout for RS485:** Change the timeout for the RS485 and then refresh the Advanced Parameters Setup HTML page to verify that the change was accepted.

3.4 Verify Control Outputs

3.4.1 **Set up a control output:** Set up control outputs to a CM2, CM4, and a proxima breaker to have associations. Perform control output for these devices and verify that they pass.

3.5 Verify that FTP works

3.5.1 **FTP a custom device table:** FTP a custom HTML table and view it to verify that it works correctly.

3.5.2 **FTP Firmware:** FTP new firmware into a CM4 an verify that it works.

ECC TEST

ECC Test Check List

TEST #	TEST	PASS	Fail
1.1.1	4-Wire RS485 Powerlogic 9600		
1.1.2	4-Wire RS485 Modbus 9600		
1.1.3	4-Wire RS485 Mixed Mode 9600		
1.2.1	4-Wire RS485 Powerlogic 19200		
1.2.2	4-Wire RS485 Modbus 19200		
1.2.3	4-Wire RS485 Mixed Mode 19200		
1.3.1	4-Wire RS485 Modbus 38400		
1.4.1	2-Wire RS485 Powerlogic 9600		
1.4.2	2-Wire RS485 Modbus 9600		
1.4.3	2-Wire RS485 Mixed Mode 9600		
1.5.1	2-Wire RS485 Powerlogic 19200		
1.5.2	2-Wire RS485 Modbus 19200		
1.5.3	2-Wire RS485 Mixed Mode 19200		
1.6.1	2-Wire RS485 Modbus 38400		
2.1.1	Table Values		
2.1.2	Meters Displays		
2.1.3	Bar Charts		
2.2.1	GFX Blocks		
2.3.1	Logging		
2.3.1	Alarms		
2.3.3	Active Functions		
2.4.1	Retrieve Waveform		
2.4.2	Export Waveform		
2.4.3	Import Waveform		
2.5.1	Read Register		
2.5.2	Write Register		
2.5.3	Read Multiple Register		
2.5.4	Write Multiple Register		
3.1.1	Administrator Password		
3.1.2	View Only Access Level		
3.1.3	No Access Level		
3.1.4	User3 Password Bit Map		
3.1.5	Administrator Password Bit Map		
3.2.1	ECC Capable of being Accessed From 10 Sources		
3.2.2	ECC Denies Access From 11th Source		
3.3.1	Advance Setup available only to Administrator		
3.3.2	Default Access Token Expiration		
3.3.3	Less than Default Access Token Expiration		
3.3.4	Greater than Default Access Token Expiration		
3.3.5	Configure CM4 Timeout		
3.3.6	Configure RS485 Timeout		
3.4.1	Control Output		
3.5.1	FTP Custom Table		
3.5.2	FTP Firmware		

Recommended Testing

1) Long distance communications testing per table baud rates to verify distance capabilities

4-Wire

Baud Rate	Max Distance for 1-16 Devices	Max Distance for 17-32 Devices
9600	10,000ft (3,048m)	4,000 (1,219m)
19200	10,000ft (3,048m)	2,500 (762m)
38400	5,000 (1,524m)	1,500 (m)

2-Wire

Baud Rate	Max Distance for 1-16 Devices	Max Distance for 17-32 Devices
9600	10,000ft (3,048m)	4,000 (1,219m)
19200	5,000 (1,524m)	2,500 (762m)
38400	TBD	TBD

SQUARE D COMPANY
GROUPE SCHNEIDER

Power Management Operations
295 Tech Park Drive - Suite 100 Lavergne, Tn. 37086

PURCHASE REQUISITION & CHANGE NOTICE

ROUTING →

☐ PRODUCTIVE
☐ NON-PRODUCTIVE
☐ ORDER CHANGE
☐ PRICE CHANGE

PART NO.

VENDOR 15580

ARIA TECHNOLOGIES

(STEVE MOEN) x111

PURCHASE ORDER NO. 0070313

ACCOUNT NO. 870-370-E103

SHIP VIA	FOB POINT	VENDOR PHONE	TERMS	DELIVER TO
NEXT DAY		(925) 447-7500		JEFF FOWLER

MARK CONTAINERS	☐ REPLACEMENT ☐ NON-REPLACEMENT	TAXABLE	NON TAXABLE	DATE WANTED	DATE PROMISED
				4-27-00	

ITEM	QTY.	DESCRIPTION OR NATURE OF CHANGE	PRICE EACH	TOTAL COST EACH
1	1	HRA 026 - U6 U6 - 10F	$38.20	$38.20
		Duplex Multimode SC to SC 10FT.		
		Shipping - Next Day Air		
		4-28 - 1ZE99W490341759116		

DATE OF ISSUANCE	ISSUED BY	DATE ORDERED	PURCHASED BY	EST. COST	TOTAL COST
1-26-00 2:30	JEFF FOWLER	4/27 VERBAL	~~JEFF FOWLER~~	$	$

REMARKS:

E103/81730/3703

LEFT VOICEMAIL @ 3:00

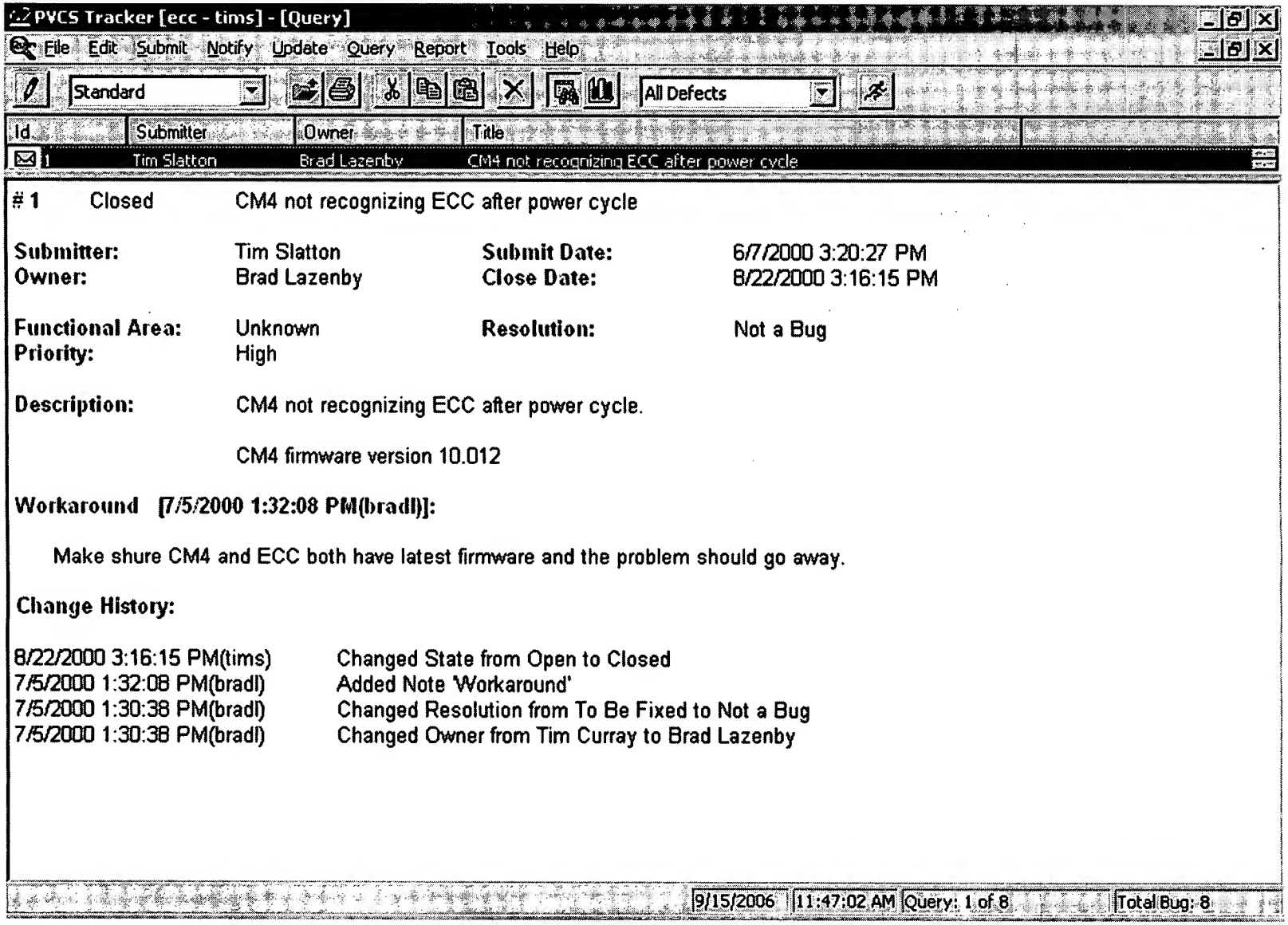
APPROVALS

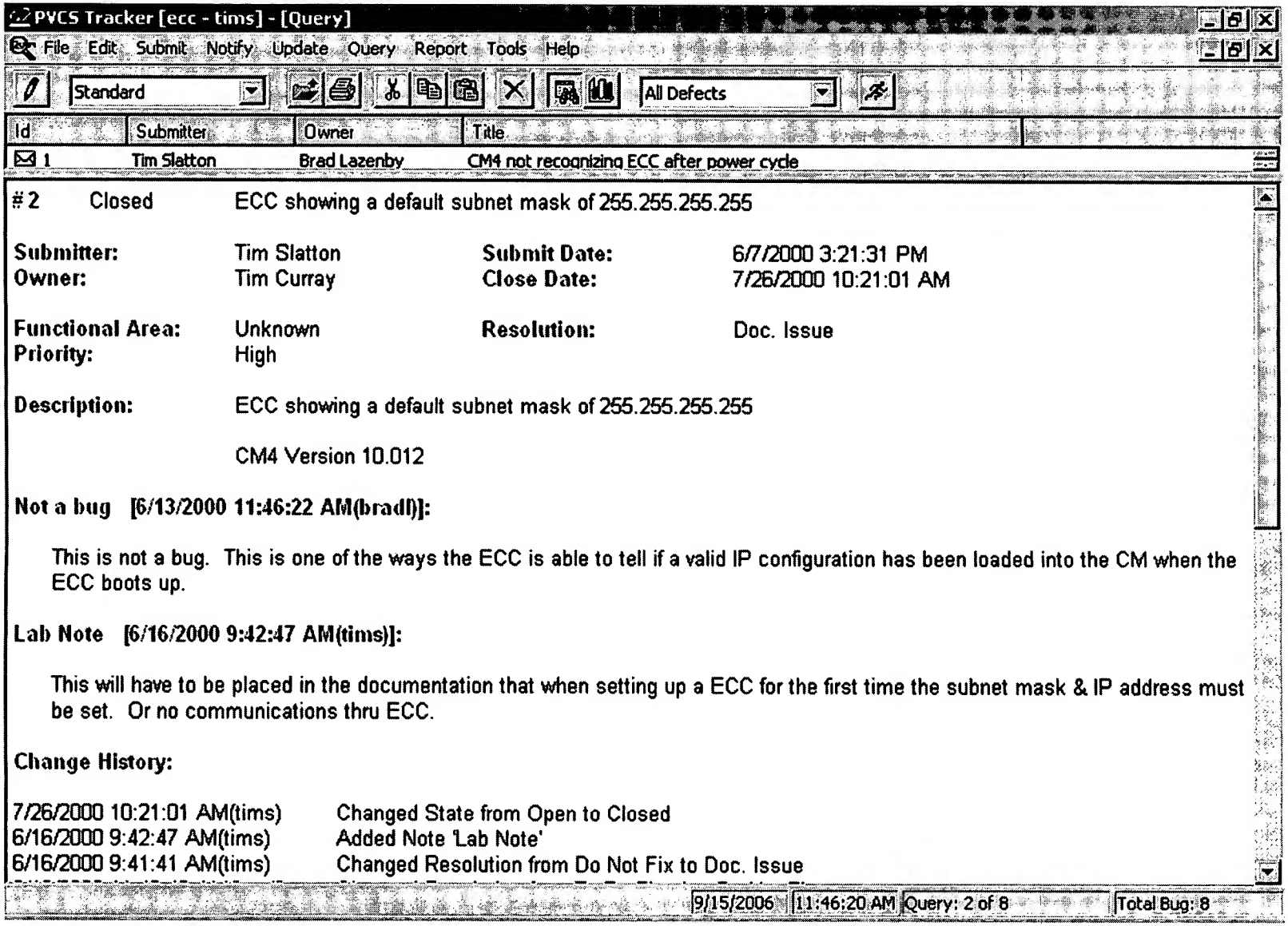
PM	MFG	PC	MM	AC	CE	ER
VP	QS-1	QS-2	QA	DC	PE	DP

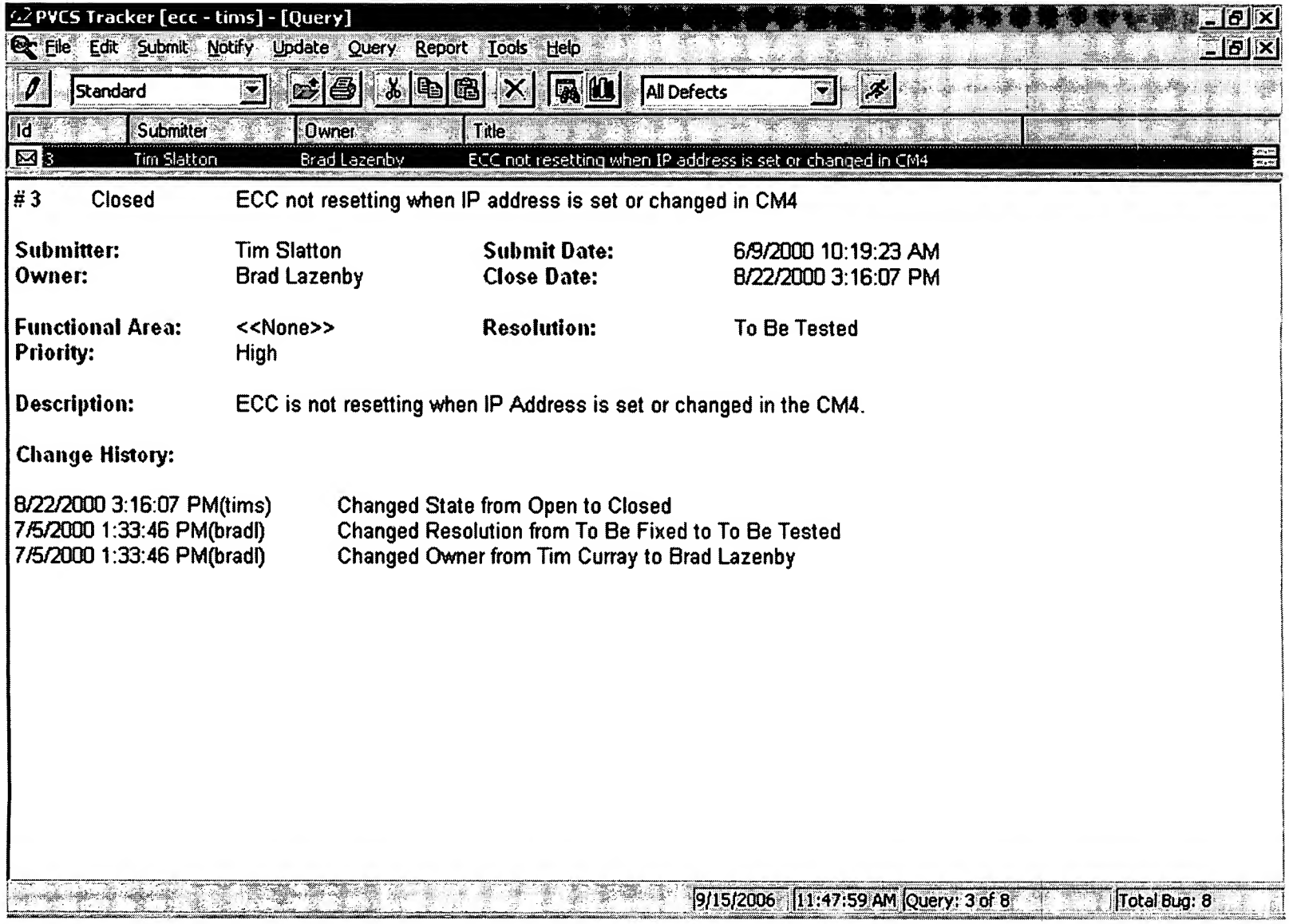
THIS IS TO CONFIRM AN ORDER PLACED BY PHONE WITH FAXED ON 4/28

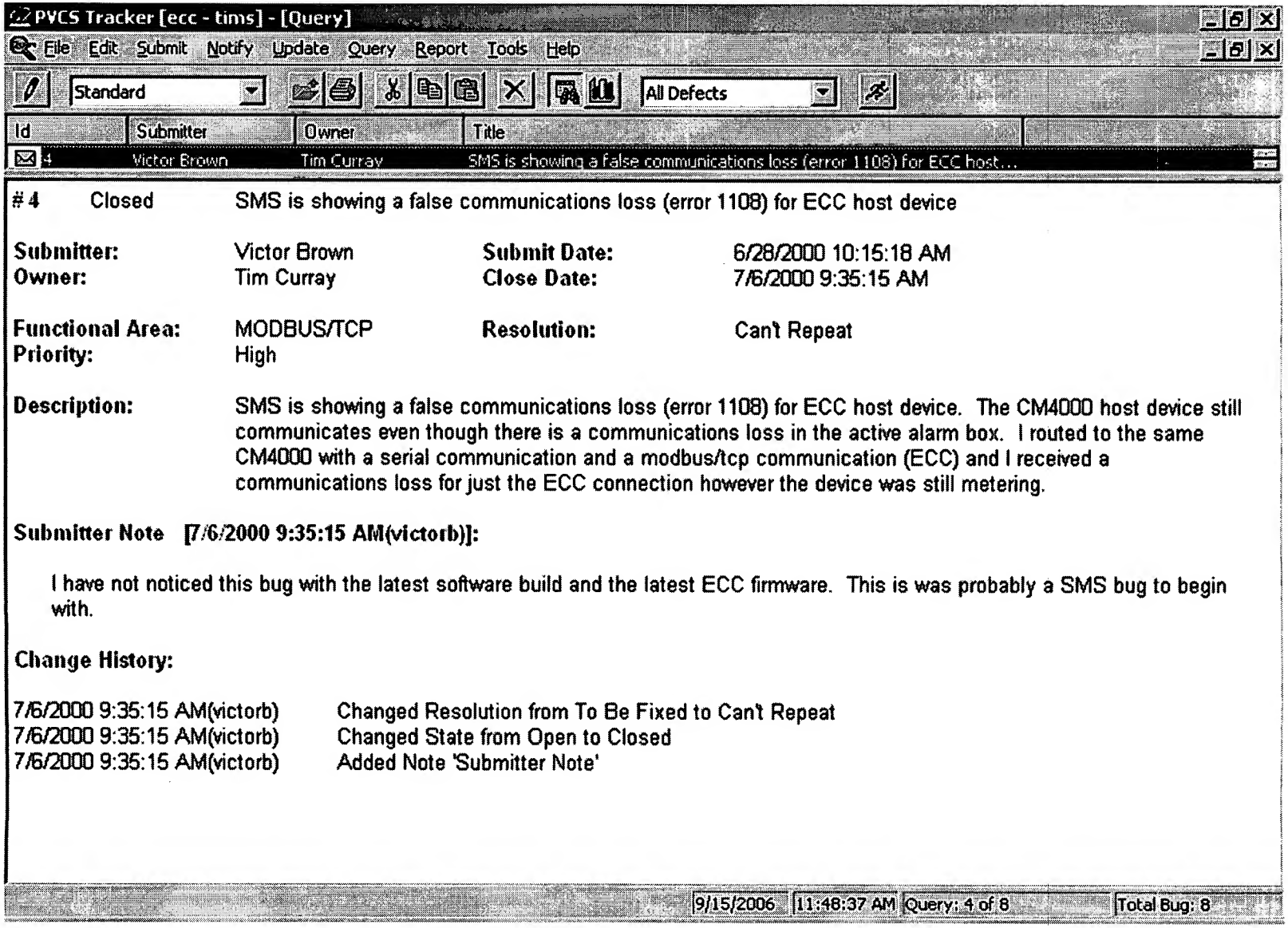
FAX 925 454-1265

PE 1232


PVCS Tracker [ecc - tims] - [Query]
File Edit Submit Notify Update Query Report Tools Help
Standard
All Defects
Id Submitter Owner Title
1 Tim Slatton Brad Lazenby CM4 not recognizing ECC after power cycle
1 Closed CM4 not recognizing ECC after power cycle
Submitter: Tim Slatton
Submit Date: 6/7/2000 3:20:27 PM
Owner: Brad Lazenby
Close Date: 8/22/2000 3:16:15 PM
Functional Area: Unknown
Resolution: Not a Bug
Priority: High
Description: CM4 not recognizing ECC after power cycle.
CM4 firmware version 10.012
Workaround [7/5/2000 1:32:08 PM(bradl)]:
Make shure CM4 and ECC both have latest firmware and the problem should go away.
Change History:
8/22/2000 3:16:15 PM(tims) Changed State from Open to Closed
7/5/2000 1:32:08 PM(bradl) Added Note 'Workaround'
7/5/2000 1:30:38 PM(bradl) Changed Resolution from To Be Fixed to Not a Bug
7/5/2000 1:30:38 PM(bradl) Changed Owner from Tim Curray to Brad Lazenby
9/15/2006 11:47:02 AM Query: 1 of 8 Total Bug: 8


PVCS Tracker [ecc - tims] - [Query]
File Edit Submit Notify Update Query Report Tools Help
Standard
All Defects
Id
Submitter
Owner
Title
1
Tim Slatton
Brad Lazenby
CM4 not recognizing ECC after power cycle
#2 Closed ECC showing a default subnet mask of 255.255.255.255
Submitter: Tim Slatton
Submit Date: 6/7/2000 3:21:31 PM
Owner: Tim Curray
Close Date: 7/26/2000 10:21:01 AM
Functional Area: Unknown
Resolution: Doc. Issue
Priority: High
Description: ECC showing a default subnet mask of 255.255.255.255
CM4 Version 10.012
Not a bug [6/13/2000 11:46:22 AM(bradl)]:
This is not a bug. This is one of the ways the ECC is able to tell if a valid IP configuration has been loaded into the CM when the ECC boots up.
Lab Note [6/16/2000 9:42:47 AM(tims)]:
This will have to be placed in the documentation that when setting up a ECC for the first time the subnet mask & IP address must be set. Or no communications thru ECC.
Change History:
7/26/2000 10:21:01 AM(tims) Changed State from Open to Closed
6/16/2000 9:42:47 AM(tims) Added Note 'Lab Note'
6/16/2000 9:41:41 AM(tims) Changed Resolution from Do Not Fix to Doc. Issue
9/15/2006
11:46:20 AM
Query: 2 of 8
Total Bug: 8


PVCS Tracker [ecc - tims] - [Query]
File Edit Submit Notify Update Query Report Tools Help
Standard
All Defects
Id
Submitter
Owner
Title
3
Tim Slatton
Brad Lazenby
ECC not resetting when IP address is set or changed in CM4
3 Closed ECC not resetting when IP address is set or changed in CM4
Submitter: Tim Slatton
Submit Date: 6/9/2000 10:19:23 AM
Owner: Brad Lazenby
Close Date: 8/22/2000 3:16:07 PM
Functional Area: <<None>>
Resolution: To Be Tested
Priority: High
Description: ECC is not resetting when IP Address is set or changed in the CM4.
Change History:
8/22/2000 3:16:07 PM(tims) Changed State from Open to Closed
7/5/2000 1:33:46 PM(bradl) Changed Resolution from To Be Fixed to To Be Tested
7/5/2000 1:33:46 PM(bradl) Changed Owner from Tim Curray to Brad Lazenby
9/15/2006
11:47:59 AM
Query: 3 of 8
Total Bug: 8


PVCS Tracker [ecc - tims] - [Query]
File Edit Submit Notify Update Query Report Tools Help
Standard
All Defects
Id
Submitter
Owner
Title
4
Victor Brown
Tim Curray
SMS is showing a false communications loss (error 1108) for ECC host...
#4 Closed SMS is showing a false communications loss (error 1108) for ECC host device
Submitter: Victor Brown
Submit Date: 6/28/2000 10:15:18 AM
Owner: Tim Curray
Close Date: 7/6/2000 9:35:15 AM
Functional Area: MODBUS/TCP
Resolution: Can't Repeat
Priority: High
Description: SMS is showing a false communications loss (error 1108) for ECC host device. The CM4000 host device still communicates even though there is a communications loss in the active alarm box. I routed to the same CM4000 with a serial communication and a modbus/tcp communication (ECC) and I received a communications loss for just the ECC connection however the device was still metering.
Submitter Note [7/6/2000 9:35:15 AM(victorb)]:
I have not noticed this bug with the latest software build and the latest ECC firmware. This is was probably a SMS bug to begin with.
Change History:
7/6/2000 9:35:15 AM(victorb) Changed Resolution from To Be Fixed to Can't Repeat
7/6/2000 9:35:15 AM(victorb) Changed State from Open to Closed
7/6/2000 9:35:15 AM(victorb) Added Note 'Submitter Note'
9/15/2006
11:48:37 AM
Query: 4 of 8
Total Bug: 8